



Ming Ying Wei

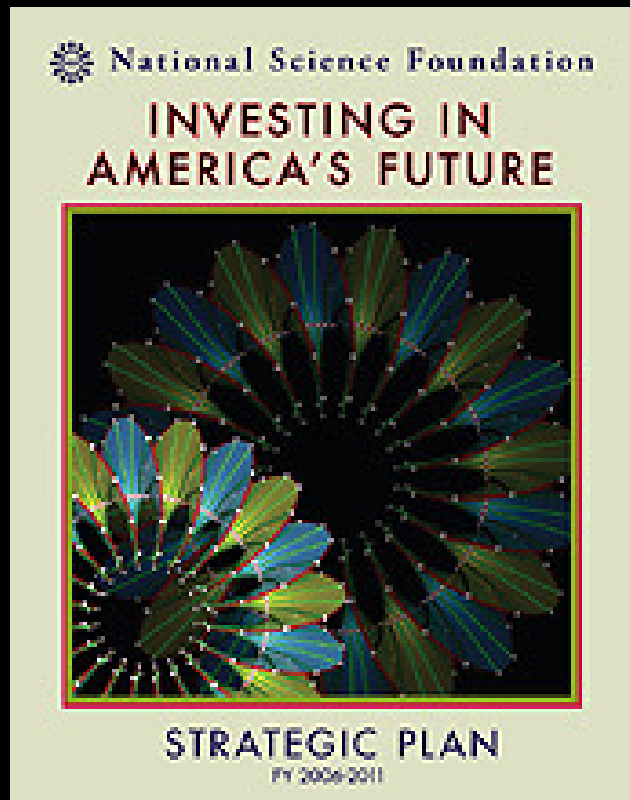
National Aeronautics & Space Administration

Jill Karsten

National Science Foundation



NSF Strategic Plan goals support GLOBE mission



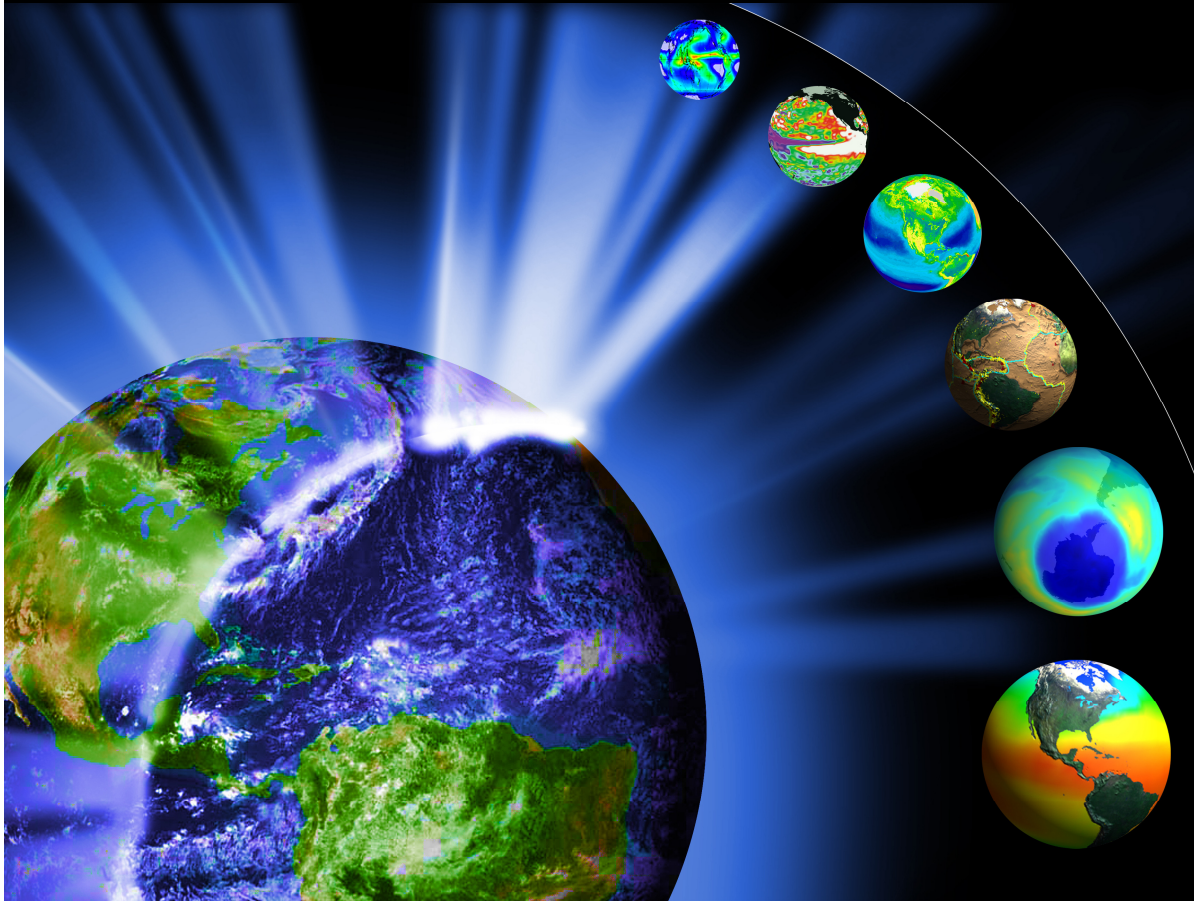
- ***Discovery***
 - *Advance knowledge*
 - *Fundamental & transformational research*
- ***Learning***
 - *World class, inclusive workforce*
 - *Expand scientific literacy of all citizens*
- ***Research Infrastructure***
 - *Critical investments*
- ***Stewardship***



In 2006, NSF announced a new direction for its support of GLOBE science, with the goal of:

- keeping what is good in GLOBE
- better supporting Next Generation GLOBE priorities
- better reflecting the nature of modern geoscience research

Earth Systems Science Approach



- Understanding the *connections* within and between the different cycles that make up natural systems

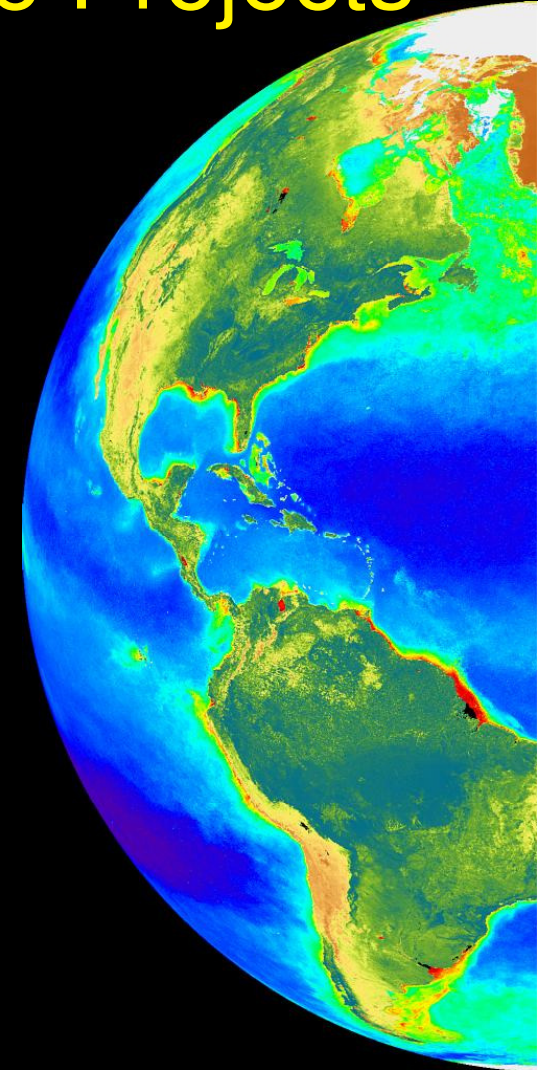
Change in the way science is done

- Large collaborative efforts
- Multidisciplinary
- Multinational
- Highly instrumented
- Highly automated
- Highly networked
- Data and analysis intensive
- Use of observatories for both research & learning

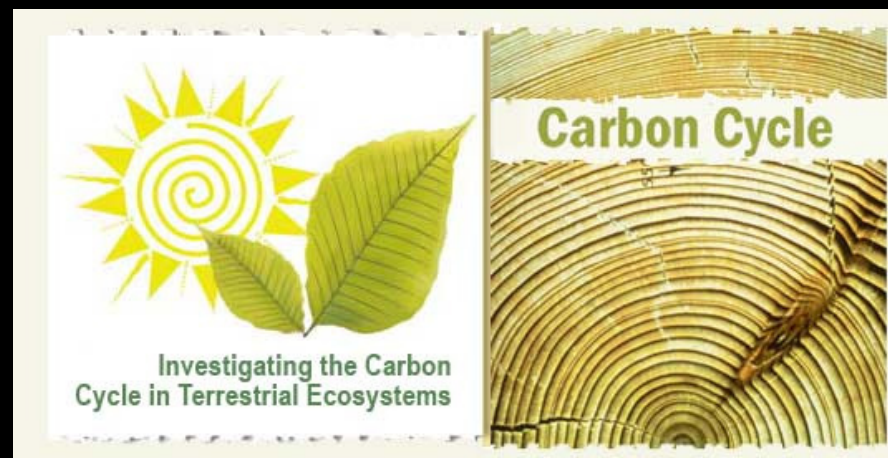
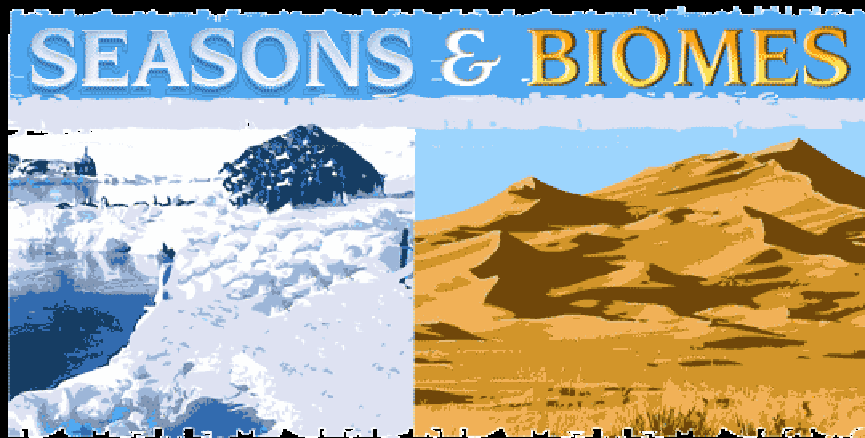


GLOBE Earth System Science Projects

- GLOBE students participate in hands-on, inquiry based investigations
 - Protocol-driven data collection, analysis, interpretation
- Focus on Earth System Science questions
- Leverage NSF and NASA investments in large, multi-disciplinary research projects
- Expand geoscientific sub-disciplines covered within GLOBE program



Earth System Science Projects 2006-2010



GLOBE's first decade brought many successes.

Our expectations for the Next Generation GLOBE program and the ESSPs initiated in 2006 are thus ambitious...

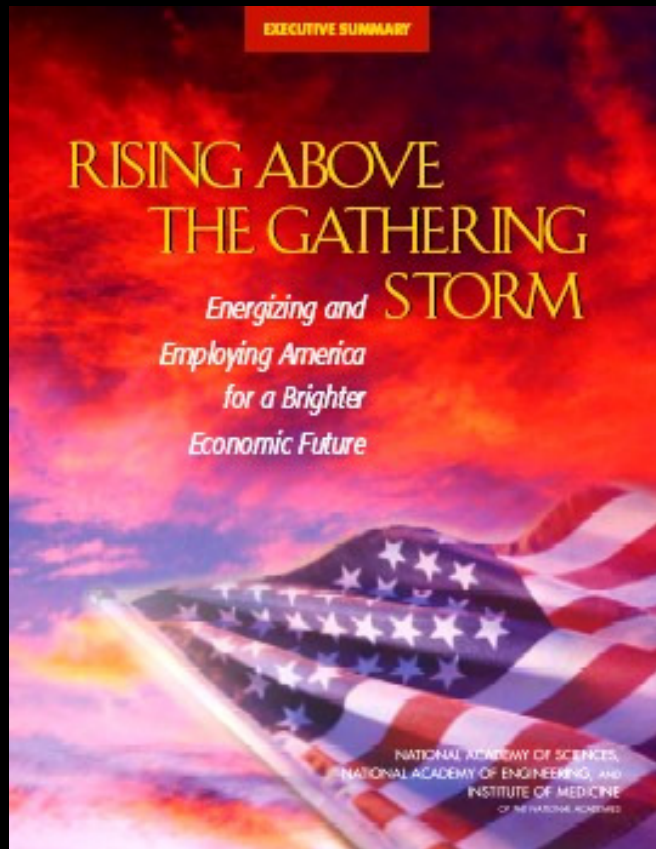


.... how are we doing so far?

Public awareness about Earth System Science issues is growing, creating an important opportunity for improving geoscience education

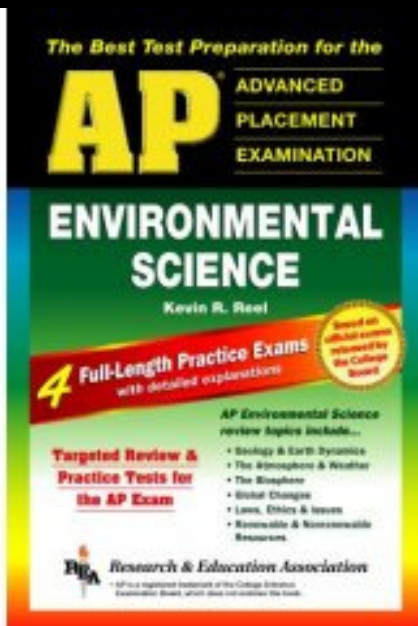


Concerns about preparing the future scientific and technical workforce are also fueling opportunities for geoscience education reform



Earth science can be a 'gatekeeper' to a student's interest in studying more science

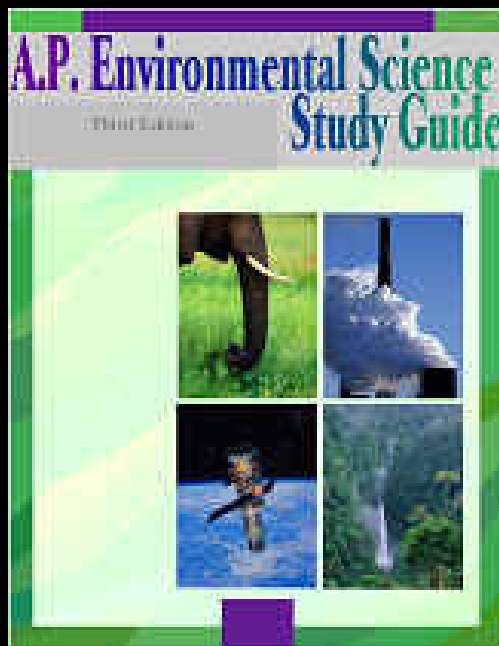
Future economic health of society will require more "geo" knowledge

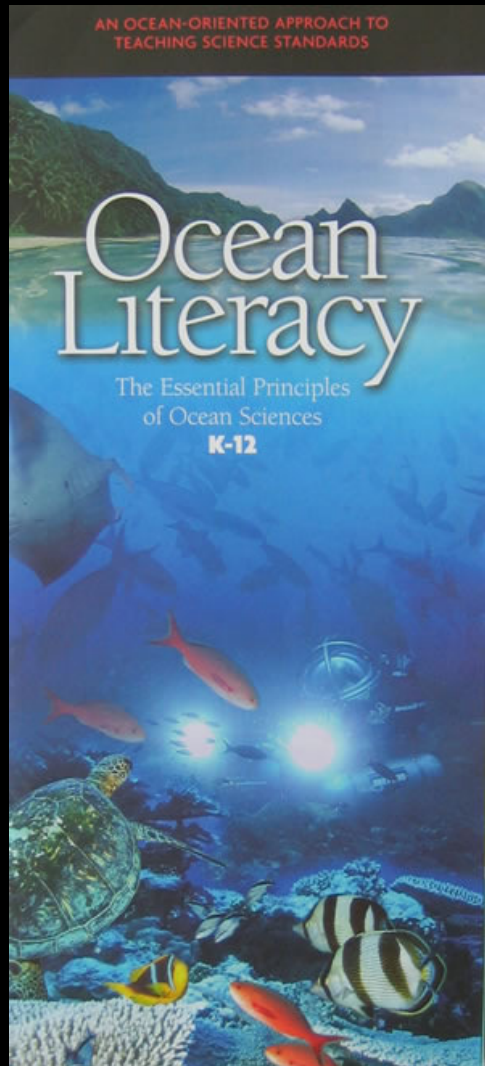


Reforming Advanced Placement Environmental Science

- Focus on Big Ideas
- Use inquiry-based instruction
- Pare down “mile wide, inch deep” content
- Emphasize scientific foundations behind issues
- Update scientific content

New test available in 2010



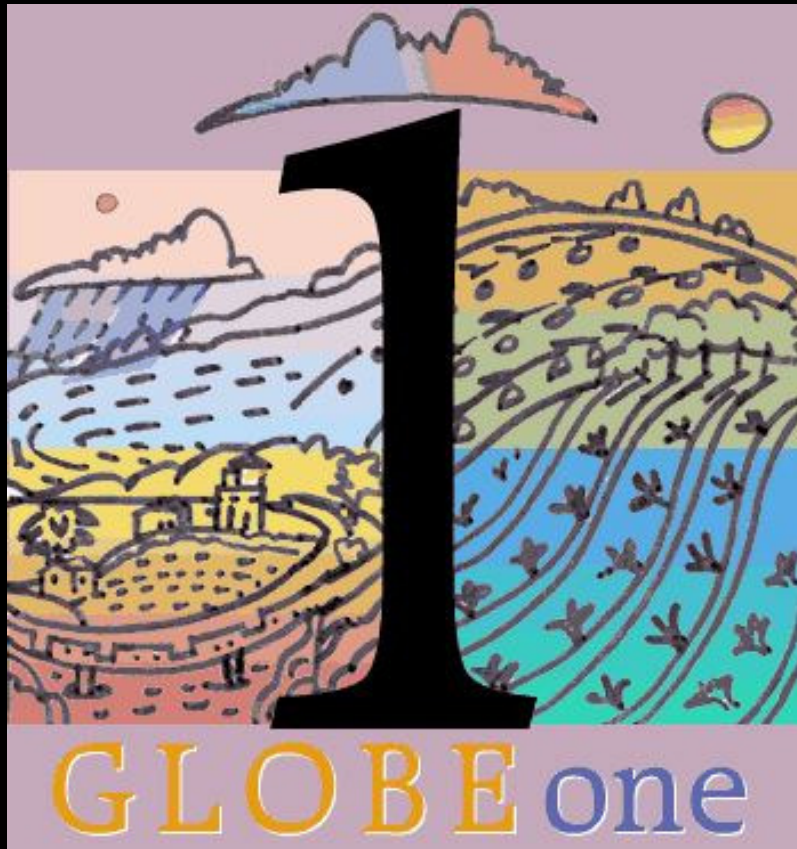


Earth System Science Literacy: What should people know?

Ocean science literacy defined

- **Atmospheric science/climate change literacy in the works**
- **Terrestrial geoscience literacy being planned**

The different components must be knitted together into a single Earth System Science Literacy framework



GLOBE is already on a path toward serving well the NSF strategic goals. The role of GLOBE in achieving broader, geoscience education community goals is yet to be defined, but it is going to be important!

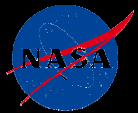
This is just the beginning...

Contact Information



Dr. Jill Karsten, NSF

jkarsten@nsf.gov or globetrotter@nsf.gov



Dr. Ming-Ying Wei, NASA

ming-ying.wei-1@nasa.gov